East Bay Hills Roadside Standards

Jurisdictions in the East Bay Hills

The East Bay Hills consists of multiple jurisdictions (as shown on the following map) that establish fire related codes and enforce these standards.

- The three cities of Berkeley, El Cerrito and Oakland are responsible for establishing standards for roadside clearances within their city boundaries.
- University of California of Berkeley and the Lawrence Berkeley Laboratory are located on lands owned by the State Board of Regents. The State Fire Marshall and the California Department of Forestry and Fire Protection have responsibility for these state lands.
- The region includes two special districts. Authorizing state legislation for East Bay Regional Park District and East Bay Municipal Utility District empower them to set standards for their own lands.
- The area also includes roadsides owned and managed by the State (CalTrans), Alameda County and Contra Costa County which set their own standards for maintenance.

Many of these jurisdictions geographically overlap resulting in questions of who establishes and enforces fire codes for any given parcel of land. Because all of the jurisdictions can be impacted by wildland fire, the stakeholder agencies have come together to create a regional standard for roadside clearances to increase safety in the hills.

Existing Standards

The Uniform Fire Code Division II Environmental Hazard Controls, Appendix II-1 Suppression and Control of Hazardous Fire Areas provides for Clearance of Brush or Vegetative Growth from Roadways in Section 17.

> The Chief may remove and clear within 10' on each side of roadway all flammable vegetation or other growth. May enter upon private property to clear. Does not apply to single specimens of trees, ornamental shrubbery or cultivated groundcovers provided that they do not form a means of readily transmitting fire. "Roadway" applies to portion of highway or private street improved or ordinarily used for vehicular traffic. This section also enables the chief to require reasonable alternatives measures.

Section 16 provides for Clearance of Brush or Vegetative Growth from Structures.

> Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away for a distance not less than 30' on each side all flammable vegetation or other combustible growth. Section shall not apply to single specimens of trees, ornamental shrubbery or similar plants used as groundcovers provided they do not form a means of rapidly transmitting fire from the native growth to any structure. Remove portion of any tree that extends within 10' of the outlet of any chimney. Maintain any tree adjacent to or overhanging any building free of dead-wood. Maintain roof of any structure free of leaves, needles or other dead growth.
>
> Chief may require additional fire protection or firebreak. Removal of all brush, flammable vegetation or combustible growth. Grass and vegetation located more than 30 feet from such building and less than 18" in height may be maintained where necessary to stabilize the soil and prevent erosion.

Cerrito and applies to all lands within their sphere of influence. The state and special districts work cooperatively with the cities and use this same standard when establishing clearance from structures.

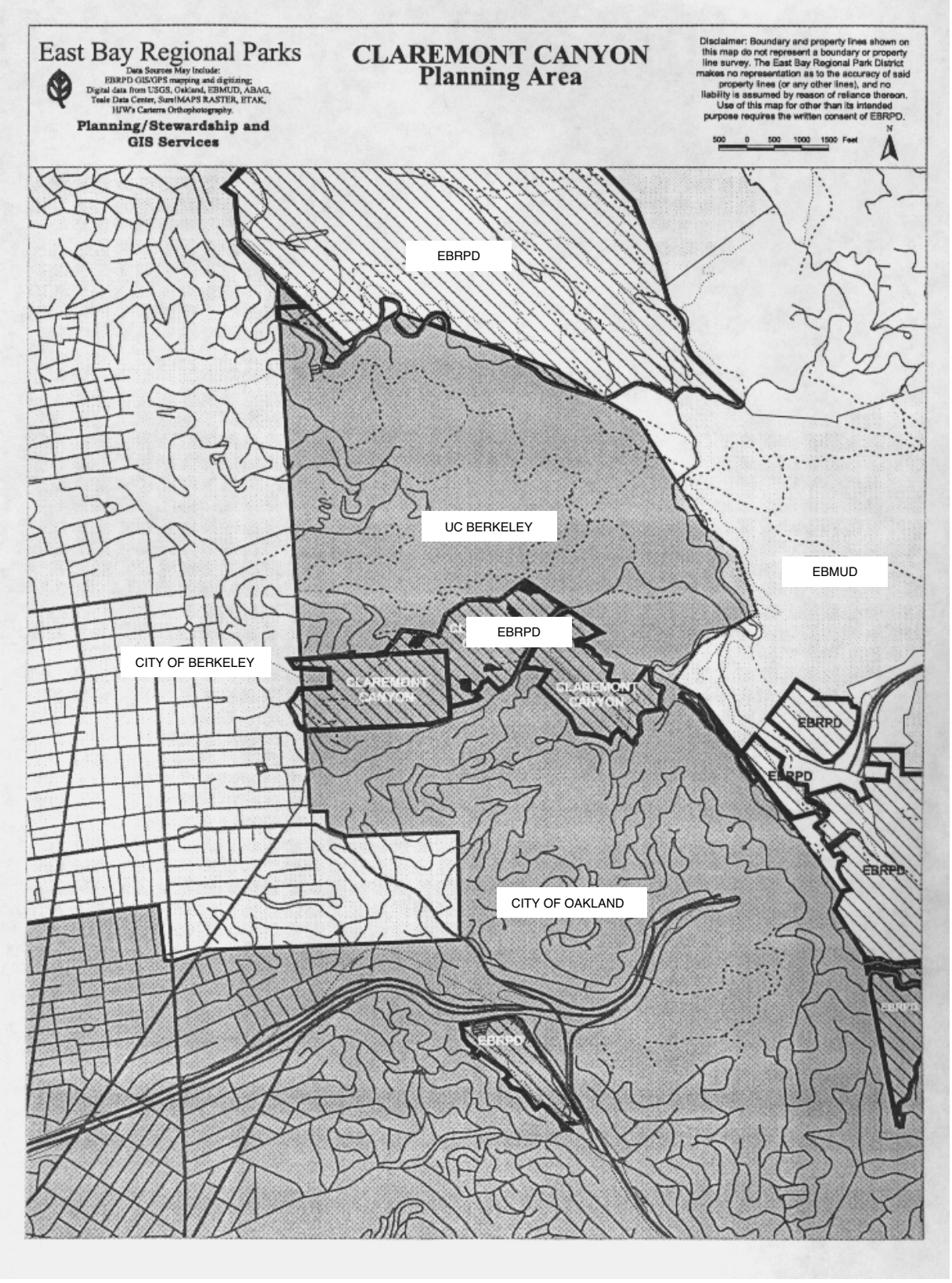

Figure 1
Map of Jurisdictions in the East Bay Hills

For the State Responsibility Areas, Public Resource Code 4291 sets standards for vegetation clearance around structures, but there are no established standards for roadside clearances included in this code.

Claremont Canyon as a Model for Regional Standards

The East Bay hills have been divided into 34 compartments for fire management pre-planning and fire fighting. Claremont Canyon is located in two of these compartments and is being studied as a model for establishing regional roadside clearance standards.

The roadside clearance standards are a part of the system of fire management within a fire management compartment. Roadside clearance needs to support the fire management strategy established by fuel breaks. The other mitigation measures in the compartment need to be considered as the roadside standards are being established for the area. The goals for fire management in each compartment include:

1. Ignition reduction
2. Fire containment.
3. Safety of the public and emergency management personnel (evacuation/ access)

In extreme weather conditions the goal may only be to buy time for evacuation, in more normal weather conditions all three goals apply.

System of Establishing Standards for Claremont Canyon.

1. Identify the fire management compartment and strategic roadways.
2. Define the goals for the roadside in terms of fire performance (ignition reduction, containment strategies/ sub compartments, evacuation etc.)
3. Identify other goals or values that need to be incorporated into the treatment considerations: riparian areas, protected species, slope stability, slope aspect, erosion control etc.
4. Evaluate the roadside to identify the various conditions to be mitigated.
5. Identify the appropriate mitigation strategies.
6. Prioritize for implementation with other fire management treatments in the compartment.

Implementation will need to address both priorities and financial considerations. The development of the implementation plan is a second step after identification of the issues and evaluation of the appropriate mitigation. It is recognized that fuel break work and roadside clearance could be competing for the same mitigation funds. There is a need for both a short term and a long-term approach. The timing of funding and work cycles will need to be incorporated into the implementation plan.

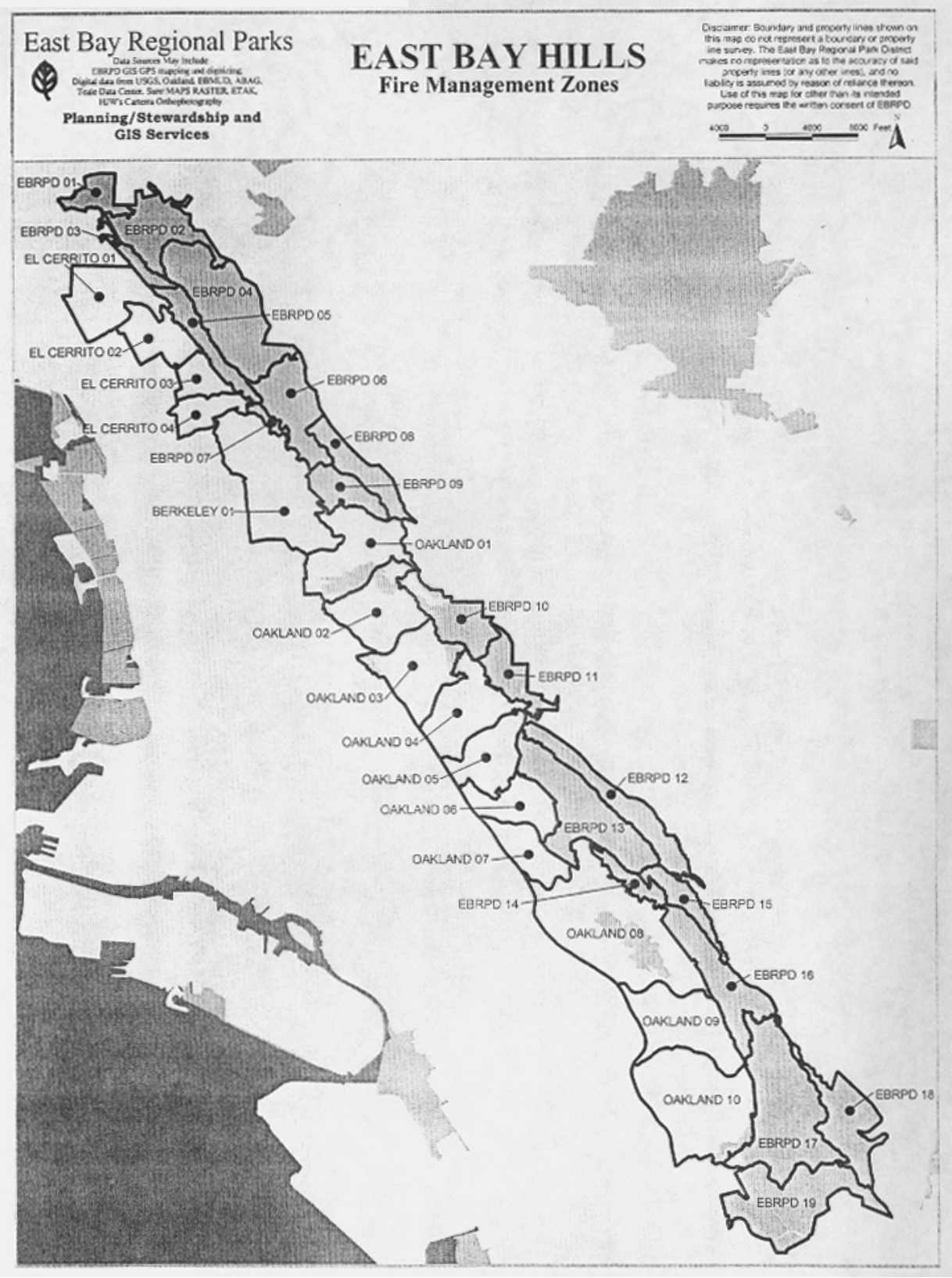

Figure 2
Fire Management Compartments in the East Bay Hills

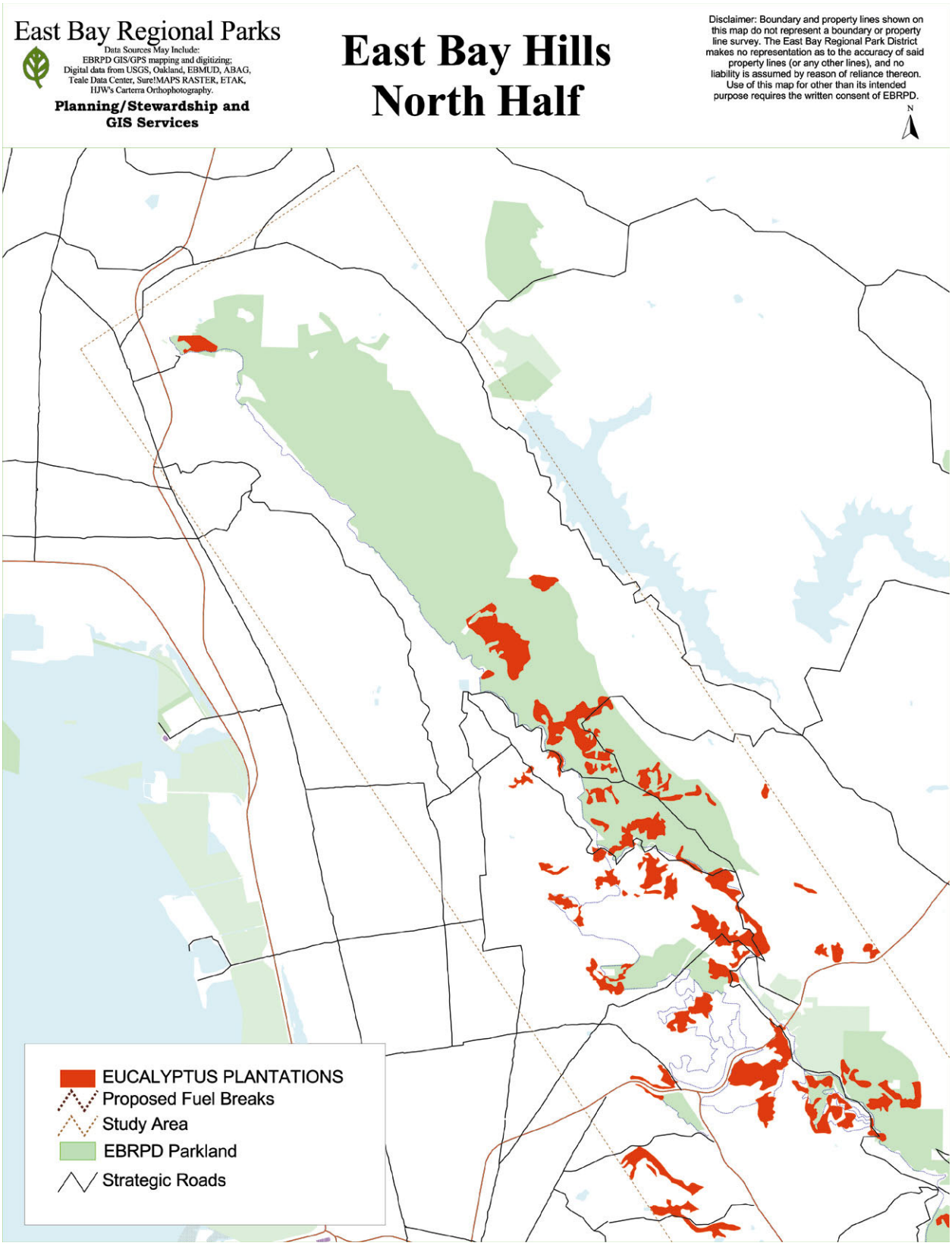

Figure 3
Strategic Roadways in the North Part of the East Bay Hills

Environmental and Regulatory Requirements

There are a number of environmental and regulatory considerations that need to be addressed in the implementation plan. Environmental considerations need to address the potential impacts of the work and what method is being used. For instance the practice of roadside spraying has added to erosion, siltation and dead brush that reduce water quality and stream protection. The required permitting processes and protection of environmentally sensitive areas need to be incorporated into the implementation of the standards.

Endangered Species: Areas of coyote brush in the canyon are a known habitat for the Federally protected Alameda Whipsnake. The US Fish and Wildlife Service must issue a permit before work can be done in this vegetation type to avoid "takings" of the protected species.
The East Bay Hills also included listed plant species and species of special concern. Implementation plans for projects will seek to avoid impacts to these species.

Stream protection: The US Army Corps of Engineers, US Fish and Wildlife Service and California Department of Fish and Game issues permits for work adjacent to streamsides. Water quality and erosion issues are covered by the Federal Clean Water Act. The City of Oakland also has an ordinance for stream protection that includes the headwater areas.

CEQA/ NEPA compliance: The California Environmental Quality Act, and Federal National Environmental Protection Act require that projects be evaluated for their impact on the environment. On-going maintenance projects might be categorically exempt if they meet certain requirements, such as on going projects. Other projects might require more extensive CEQA review.

There often are opportunities to enhance the environmental quality with projects that incorporate a wider range of stewardship issues in their planning. Fuel mitigation projects may target exotic species such as broom, eucalyptus , pampas grass, or acacia that can also assist with the goal of exotic species management. Such projects may also help reach habitat enhancement, water quality or biodiversity goals.

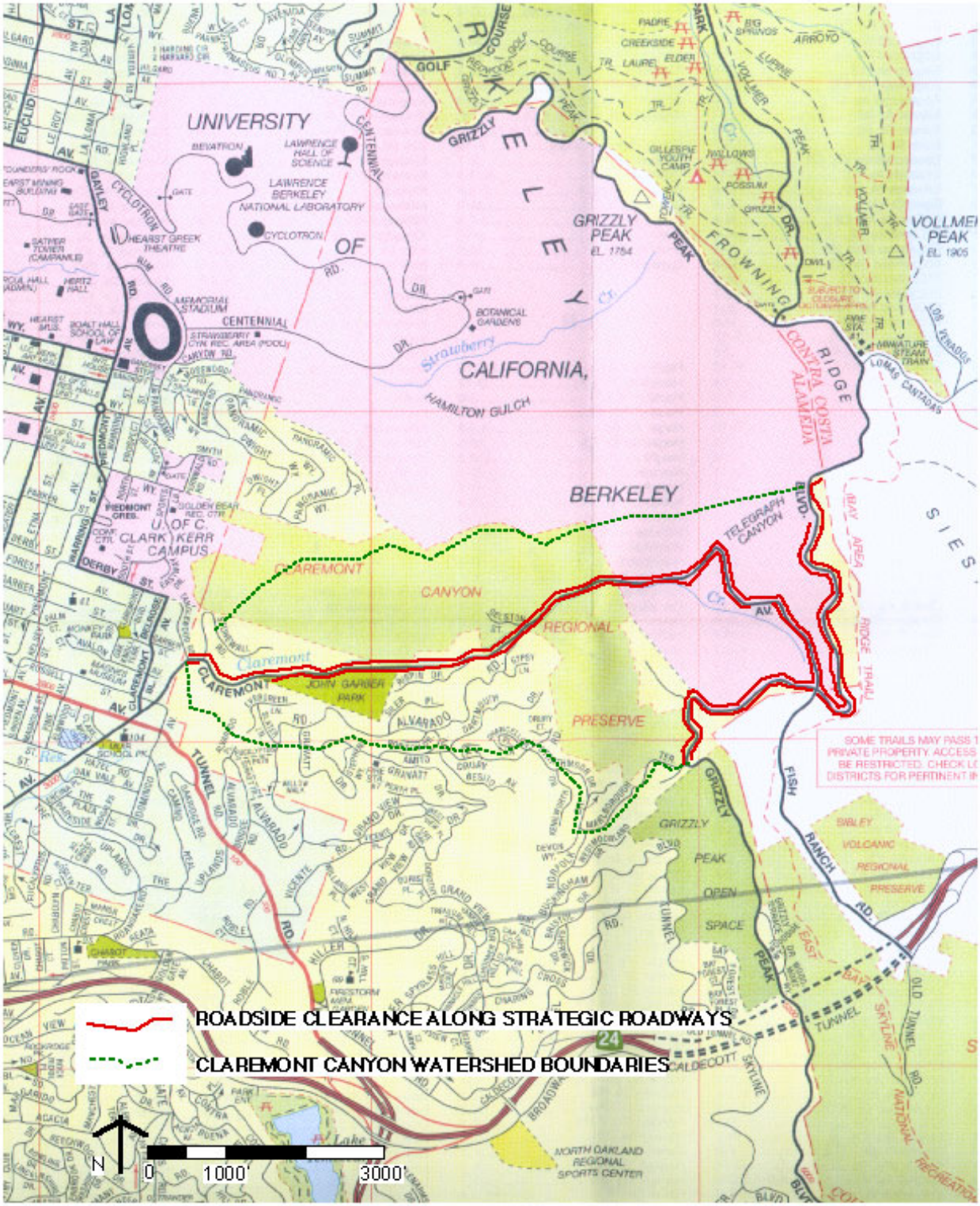

Figure 4
Context of Map of Claremont Canyon

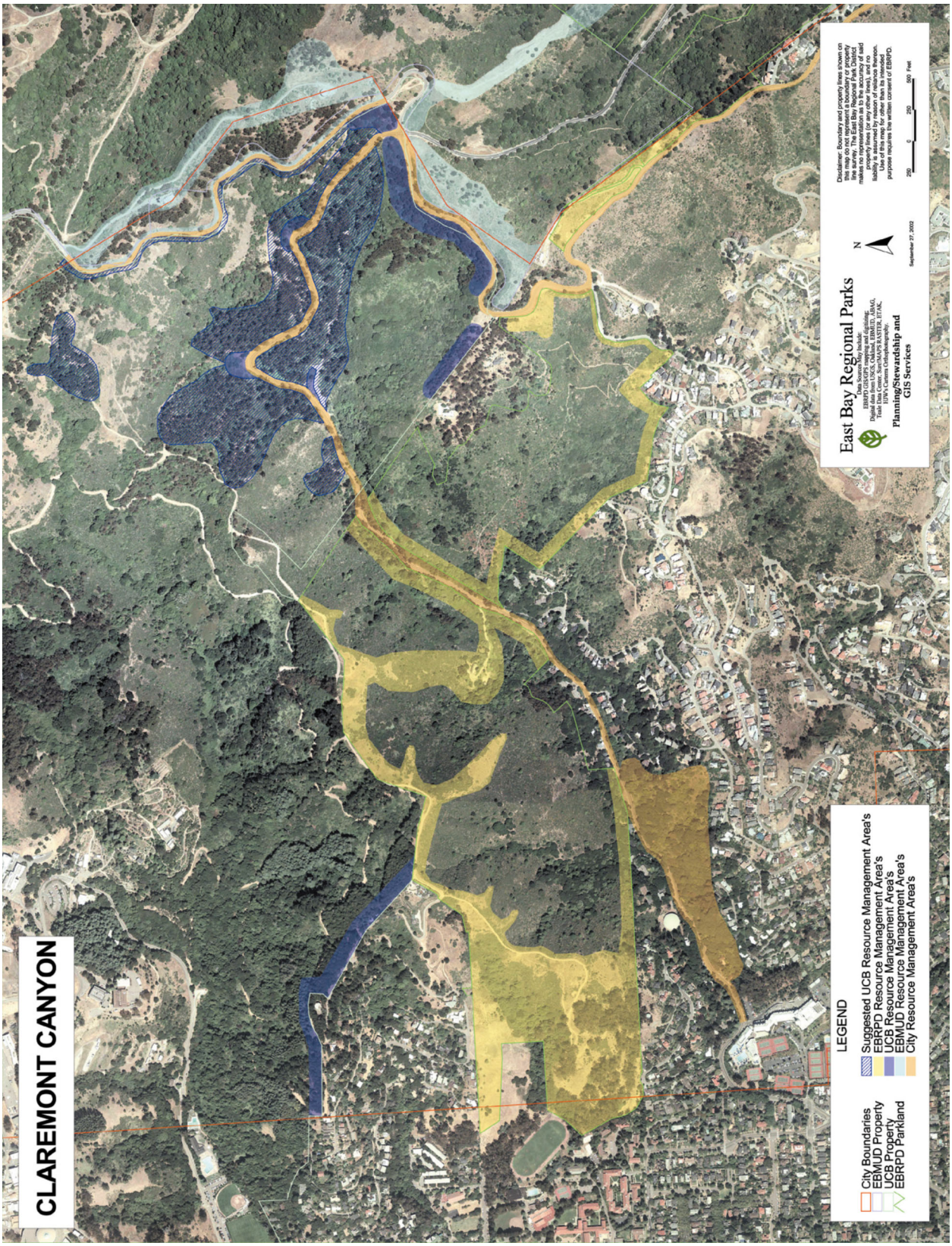

Figure 5
Treatment Areas in Claremont Canyon

Claremont Canyon Description and Treatment Prescriptions

Description: Claremont Canyon is a 510 acre canyon centered on Claremont Avenue. There are three strategic roadways in the canyon that play a critical role in firefighter access and evacuation. These strategic roadways were identified by their traffic capacity and use, as well as their strategic location within the fire management compartment. They also provide access to critical facilities located in the canyon that include communication towers and water tanks.

1. Claremont Avenue runs the length of the canyon parallel to Claremont Creek from the western end to the eastern ridge. This two lane paved road does not have curbs or shoulders. The adjacent topography limits the number of turnouts.
2. Grizzly Peak Boulevard is located along the eastern ridgeline. This two lane paved road does not have curbs or defined shoulders. The adjacent topography limits the number of turnouts.
3. Fish Ranch Road connects to Claremont Avenue and Grizzly Peak Boulevard at the ridgeline. It provides direct connection to Highway 24 to the west. This two lane paved road does not have curbs or shoulders. The adjacent topography limits the number of turnouts.

In addition to the strategic roadways, there are many local roads that serve the Oakland residential neighborhood. The roadside clearance requirements in these areas are established by the City of Oakland municipal standards. The majority of the improved roads in the canyon are located in the residential neighborhood located on the south. These roads typically follow the topography and are two lanes or narrower, with no shoulders and limited turnouts or parking areas. The network of residential streets are connected to the major roads in only two locations at Marlborough Terrace and Alvarado Road.

There are also a number of fire trails in the canyon. Panoramic Way is located on the northern ridge and can be accessed through the Panoramic neighborhood adjacent to the University Stadium, and through the fire roads in Strawberry Canyon.

The south-facing slope of the canyon is an undeveloped wildland including the Claremont Canyon Regional Preserve, managed by East Bay Regional Park District, and University of California, Berkley. It was historically a mixed brush and grassland slope maintained by grazing and periodic burns. Remnant grasslands can be found along the ridge tops.

The north facing side of the canyon has been developed with homes along the ridgetops. This area was heavily impacted by the 1991 Tunnel Fire so many of the homes have been rebuilt to newer fire codes. Vegetation is primarily ornamental trees, shrubs and ground covers around homes. On the north slope of the canyon below the homes are undeveloped wildlands including the City of Oakland managed Garber Park and Gwinn Canyon managed by East Bay Regional Park District. Garber Park is primarily Oak woodland reflective of the moister north facing slope. Gwinn Canyon is a mosaic of moist Oak woodland on the sheltered slopes, with a mix of brushlands on the drier slopes.

Fire Management Strategy in the Canyon

The overall goals for Claremont Canyon are to enhance firefighter operations and safety through strategic fuel management. These include:

1) reduce roadside ignition potential,
2) support the development of fire management units in the canyon with sheltered fuelbreaks and
3) reduce the fuel load in critical locations adjacent to the road to provide enough time for successful initial attack

These goals recognize that in severe east wind conditions the fire may not be able to be contained within the canyon. The roadsides would be managed for access and egress under these conditions. Under the more typical west wind conditions, the fuel reduction strategies will provide time for fire fighters arrive and fight the fires.

Treatment Strategies

Treatment strategies have been developed based on the conditions found along the corridor and are shown in the following photo series. Each year a multi-agency team will inventory the area and establish an annual work plan that identifies and prioritizes the fuel modification projects for the following year's budget cycle.

The general treatments have been established as the following:

Roadside Clearance Standard:

Adopt as a regional standard Section 17 of the Uniform Fire Code Division II Environmental Hazard Controls, Appendix II-1 Suppression and Control of Hazardous Fire.

> The Chief may remove and clear within 10' on each side of roadway all flammable vegetation or other growth. May enter upon private property to clear. Does not apply to single specimens of trees, ornamental shrubbery or cultivated groundcovers provided that they do not form a means of readily transmitting fire. "Roadway" applies to portion of highway or private street improved or ordinarily used for vehicular traffic. This section also enables the chief to require reasonable alternatives measures.

Along the three major roadsides the flashy grasses and other small easily ignited materials (1 hour fuels) with be treated on an annual basis for 10' from the pavement edge. (10' is the reach of the tiger mower. This treatment is aimed at reducing roadside ignitions.)

Additional Fire Mitigation Strategies

Roadside clearances shall be supported by additional fuel modifications established on project specific basis based on site conditions, fire behavior and suppression strategies. Strategies to be considered include:

1) Protect values at risk (homes, offices, critical infrastructure etc.) with vegetation modification.

2) In strategic areas, where highly flammable brush or Eucalyptus trees are adjacent to the road, establish additional 30' of sheltered fuel break.

2a. Remove the shrubs (10 hour fuels) to create an open mosaic of grassland and less than 30% shrub density.
2b. Remove any ladder fuels beneath the Eucalyptus trees (loose bark and low hanging branches) to 14 feet.
2c. Dense stands of Eucalyptus along the road will have trees removed to thin the stand with a long term goal of phased elimination.
2d. The understory of native Oaks, Bays and other trees may also need to treated to reduce their potential for a crown fire.
2e. Trees, ornamental shrubbery and cultivated ground covers that do not form a means of readily transmitting fire shall be retained.

3) Modify vegetation to create potential containment areas taking advantage of existing roads and topographic features.

4) Where appropriate, incorporate safety zones for firefighters by modifying additional vegetation to reduce the flame length.